

UNIVERSITY CURRENTS

A Newsletter For and About the University Nuclear Engineering and Science Community

U. S. Department of Energy

Fall 1998

WELCOME!

This is the first of, hopefully, many Office of Nuclear Energy, Science and Technology newsletters designed to share information among the members of NEDHO, TRTR, the university community and other interested parties. Much of the information contained in the newsletters will be familiar to many of you. We would like to see as wide a distribution as possible and will eventually post the newsletter on our NE home page. All of you are encouraged to submit items that could be of interest to the entire community. The initial distribution of hard copies of the newsletter will be limited to those individuals whom we can locate an address for. We can improve future circulation if each of you receiving the newsletter provides us with addresses and e-mails of others who would like to receive a copy. Your participation in this newsletter is encouraged, since it is intended to bring the university nuclear engineering and science community closer together to share knowledge and be a more effective group in addressing the issues confronting us. Your participation in making this newsletter a success will be greatly appreciated. One last thing: Don't worry if some of this information (especially in this first newsletter) appears dated. With only several newsletters each year, some of the material may be old to some of you but a revelation to others. Every attempt will be made to include items that are current and helpful to the intended audience. If you have any questions please contact me by e-mail at John.Gutteridge@hq.doe.gov.

FISCAL YEAR 1999 BUDGET FOR UNIVERSITY PROGRAMS

	FY 1997	FY 1998	FY 1999
Reactor Fuel	\$2.0	\$2.1	\$2.3
NEER	--	2.2	4.5
Matching Grants	0.7	0.8	1.0
Reactor Sharing	0.4	0.5	0.7
Fellowships and Scholarships	0.5	0.6	1.0
Reactor Grants (instrumentation)	--	0.3	0.8
HBCU/HIS/Native American	0.4	0.5	0.4
Radiochemistry	--	--	0.3
TOTAL	\$4.0	\$7.0	\$11.0

The President signed the Energy and Water Development Appropriations Bill (Public Law 105-245) on October 7, 1998. This bill provides funding for the University Nuclear Science and Reactor Support Program in the Office of Nuclear Energy, Science and Technology. For fiscal year 1999, \$11,000,000 was appropriated. The Congress, in report language, specifically directed that \$4,500,000 be provided to the Nuclear Engineering Education Research program, and \$1,000,000 each to the Nuclear Energy and Health Physics Fellowships and Scholarships Program and the DOE/Industry Matching Grants Program. Congress also specified in report language that the Historically Black Colleges and Universities be funded at the FY 1997 level and that no funds were to be spent on the requested Pre-college program, a new initiative for FY 1999. Programs continuing include Reactor Sharing, Reactor Upgrades and Reactor Fuel, while a new initiative in Radiochemistry was funded.

UNIVERSITY WORKING GROUP (UWG)

In the Fall of 1997, NE, working with the Nuclear Engineering Department Heads Organization (NEDHO) and the Organization of Test Research and Training Reactor Operators established the UWG. The UWG has a two-fold purpose; to advise NE of the university community's view on nuclear engineering education and reactor support and to interact with the other members of NEDHO and TRTR to keep them abreast of developments. UWG has, more recently, taken a very active part in interacting with the Congress to impress upon congressional members and staff the importance of nuclear engineering education and the Nation's dwindling supply of research reactors. Every two years, some of the schools represented on the UWG will rotate out so that other schools can have an opportunity to serve the broader community. The UWG has a charter which is available from any UWG member school or the Office of Nuclear Energy, Science and Technology. The schools currently represented on the UWG are: California-Berkeley, Illinois, Massachusetts Institute of Technology, Massachusetts-Lowell, New Mexico, North Carolina State, Penn State, Purdue and Wisconsin. The UWG meets three to four times a year in Washington and other locations. Typically, two of these meetings occur at the ANS Winter and Spring meetings.

MATCHING GRANTS AND REACTOR SHARING PROPOSALS

Each year, letters are sent out to eligible universities asking if they would like to participate in the DOE/Industry Matching Grants Program and the Reactor Sharing Program. The Matching Grants Program is open to any university that offers an undergraduate and/or graduate degree or option in nuclear engineering and is able to find a private sponsor to match the level of DOE funds up to \$50,000. These funds can be used for a variety of purposes including equipment purchases, laboratory improvements, assistance to students and faculty, research etc. Reactor Sharing funding is available to any university with an operating research reactor. Currently, 28 of these reactors are located at 26 campuses. One of the main purposes of the program is enabling the university to reach out to other institutions in their area and share the reactor with them for research, experiments, training, facility tours etc. Thousands of individuals and hundreds of educational and other institutions have benefitted from this program. For FY 1999, the proposals from the universities for both of these programs will be due back to the Office of Nuclear Energy, Science and Technology by January 22, 1999. At that time, a three person panel will evaluate each proposal and determine the level of funding to be provided.

HOWARD UNIVERSITY COOPERATIVE INTERNSHIP PROGRAM



The Howard University Cooperative Internship Program has been in existence since May 1995. This program provides for the educational needs (i.e., tuition, and room and board) for six students along with on the job experience in such areas as international nuclear safety, space reactors, uranium facilities and medical isotopes among

others. During the summer the students work at the Department under the guidance and supervision of an assigned mentor. They work on meaningful projects, visit DOE laboratories and prepare a detailed presentation of their summer experience. This has been a mutually beneficial program for the students and the Department of Energy.

UNIVERSITY REACTOR FUEL ASSISTANCE

The DOE University Reactor Fuel Assistance Program provides replacement fuel for all U.S. university reactors. This includes fabrication and shipping of new fuel elements to the universities and shipping spent fuel elements to DOE's Savannah River site for disposal. DOE also provides replacement fuel to convert highly enriched fuel to low enriched fuel cores when sufficient funding is available. Two types of replacement fuel elements are generally provided - metallic plate type and TRIGA type. Several of the larger university reactors require refueling several times a year, while others on a one, two or several year cycle. Some university reactors do not require any refueling, The metal pin type fuel elements are manufactured at BWX in Lynchburg, Virginia, while the TRIGA fuel elements are manufactured in Romans, France. In FY 1998 DOE shipped 32 replacement fuel elements to the Missouri University Research Reactor and 10 elements to the MIT Research Reactor, while other elements for other reactors were fabricated but not shipped during FY 1998.

NEW CONTRACTOR FOR NUCLEAR ENERGY AND HEALTH PHYSICS (NEHP) SCHOLARSHIPS AND FELLOWSHIPS

Effective September 1, 1998, the contractor has been changed for the NEHP Program from the Oak Ridge Institute for Science and Engineering (ORISE) to the South Carolina Universities Research and Education Foundation (SCUREF). There should be a smooth transition from one organization to the other and the universities should not notice any disruption in this program. One of the changes being made is to offer undergraduate juniors and seniors the opportunity to attend a practicum much like the fellows. Due to reductions in administrative costs, we should be able to substantially increase the number of fellows and scholars supported even with this increased expense for undergraduate practicums. In addition, those fellows ranked high by the expert panel last year, will be reconsidered for a fellowship beginning with the second semester of this school year. All universities participating in this program are provided with application information. If any university or individual requires assistance, you may contact Mr. Craig Williamson at (423) 494-7069.

NUCLEAR ENGINEERING EDUCATION RESEARCH GRANTS (NEER)

The NEER program solicitation was posted on the Internet on October 16, 1998 with a due date for proposals of December 10, 1998 (amended from an earlier date of November 30, 1998). Details concerning the solicitation and guidelines can be found at www.id.doe.gov/doeid/PSD/solicit.html. The Federal Register Notice was posted on October 23, 1998 and refers one to the Internet site. The Federal Register Notice is located at <http://www.access.gpo/su/docs/fedreg/frcont98.html>.

HISPANIC SERVING INSTITUTIONS

This past summer the Office of Nuclear Energy funded a program at Luna Vocational Technical Institute located in Las Vegas, New Mexico. Luna Vocational Technical Institute, a community college, is one the Nation's leaders in providing young Hispanics with the necessary training needed to survive and flourish in today's high tech work environment. The students participating in this program are pursuing technical careers in areas such as environmental technicians, hazardous waste technicians, and other energy-related technical careers.

UNIVERSITY REACTOR UPGRADE PROGRAM

FY 1998, marked the first year for this reinstated program which is very similar to the university instrumentation program conducted by the Office of Energy Research in the 1980's and early 1990's. In FY 1998, 23 proposals from universities with research reactors were received and 16 were funded, although most were not at the level requested. Idaho Operations Office and Idaho National Engineering and Environmental Laboratory conducted the solicitation last year and are conducting it again this year. The solicitation is expected to be posted on the Internet in November, 1998 with proposals selected and awarded in the Spring of 1999. Specific dates are to be determined as this newsletter was being finalized. Up to \$1.0 million will be available for this program in FY 1999 compared to \$.5 million the previous year. While the focus of the Reactor Upgrade program will remain the enhancement of the performance, control or operational capability of reactor systems, as well as expanding the research and training capabilities of the reactor, less emphasis will be placed upon near-term relicensing efforts which was a focal point of the FY 1998 solicitation.

DR. J. ERNEST WILKINS, JR. CHAIR OF EXCELLENCE PROFESSORSHIP

The Dr. J. Ernest Wilkins, Jr. Chair of Excellence Professorship and Cooperation Program is located at Morgan State University in Baltimore, Maryland. The "Chair" is filled by Dr. Sekazi K. Mtingwa. Dr. Mtingwa teaches a two-semester course entitled "Electricity and Magnetism". He also presents lectures on the applications of free-electron lasers to physics, chemistry and biology at five colleges and universities, including Coppin State College and State University which do not presently offer a major in physics. Through this professorship, the Office of Nuclear Energy can contribute to the training of high quality African American engineers and scientists to provide for the Nation's future needs. Morgan State has established a partnership with area schools (primarily inner city) to provide students with research experiences during the summer. The program is an intensive 5 week program for outstanding high school juniors and seniors. The courses and training are taught at Morgan State. This past summer, the first group of 15 students took part. They were selected for the program on the basis of teacher recommendations, previous course performance, test scores and other qualifying criteria. The program enhances academic preparation for college, especially in science, engineering and mathematics. It is funded by the Office of Nuclear Energy, Science and Technology, through the Dr. J. Ernest Wilkins, Jr., Chair of Excellence Professorship.



UNIV. OF ALASKA FAIRBANKS (UAF) AMERICAN INDIAN SCIENCE & ENGINEERING SOCIETY (AISES)

The Office of Nuclear Energy, Science and Technology provided funds to allow AISES students at the UAF and a university in New Mexico to work with Los Alamos National Laboratory (LANL) and the Battelle Pacific Northwest Laboratory to operate a Neighborhood Environmental Watch Network (NEWNET) monitoring station in Alaska. They will also develop a specialized prototype radiological monitoring station. The AISES students will have the opportunity to study various aspects of the LANL Neighborhood Environmental Watch

Network, with the goal of developing a prototype station capable of gathering radiological and meteorological measurements over longer periods of time with minimal maintenance in Alaska's extreme weather. This project is an extension of work already funded in Alaska by the Pacific Northwest National Laboratory (PNNL) and the DOE Nevada Operations Office. The project addresses concerns of Native communities in northern Alaska regarding a potential accidental radioactive release from Bilibino nuclear power reactors.



The University of
Alaska Fairbanks

LIST OF NUCLEAR ENERGY/HEALTH PHYSICS FELLOWS/SCHOLARS

In the Nuclear Energy/Health Physics Fellowship and Scholarship program, seven institutions have fellows and 12 have scholars, but many institutions are not represented (see accompanying list). Please take the time to make your graduate and undergraduate students aware of these programs so that more students at more universities have the opportunity to compete for fellowships and scholarships. The number of fellowship and scholarship awards should increase substantially in FY 1999 given the increased appropriation level for these activities from the Congress and cost savings realized in the management of the program. The scholarship program can be very useful in attracting undergraduate engineering students to study nuclear engineering.

LOSS OF A COLLEAGUE

The Nuclear Energy/Health Physics (NEHP) Fellowship and Scholarship program offers outstanding students the wonderful opportunity to achieve an undergraduate or advanced degree in nuclear engineering or health physics if they successfully compete for these sought after awards. The fellowship award is particularly difficult to achieve and carries with it a great deal of prestige. One of our students, Brian Hansen, earned a health physics fellowship in 1997 (one of only two awarded that year) and attended the University of Michigan compiling a straight "A" average his first year. Brian then distinguished himself during his summer practicum and was nominated and selected to receive an Outstanding Achievement Award for his work at the Los Alamos National Laboratory. Brian received numerous accolades from his professors and laboratory mentors. Tragically, Brian Hansen was killed in an automobile accident on Sunday, August 30, 1998 in Arkansas on his way back to Michigan from his home in Texas. Dr. Kim Kearfott, Brian's fellowship coordinator at Michigan wrote on Brian's fellowship renewal form on January 8, 1998 the following: "This is a fantastic/smart, hardworking and focused student." Secretary of Energy, Bill Richardson, sent a personal letter to Brian's mother and stepfather stating in part that "we are all poorer as a result of the loss of such a gifted and promising young man. Please accept our deepest condolences for your loss." I'm sure all of you who knew Brian share these sentiments. He will be missed.

Important Dates to Remember

- December 10, 1998:** NEER Proposal Due
- December 13-16, 1998:** TRTR Meeting
Boston, MA
- January 22, 1999:** Matching Grant and
Reactor Sharing Proposals
due to DOE/NE.

FELLOWS		
<i>Name</i>	<i>Year of Completion</i>	<i>University</i>
Marvin Barnett	2000	NC State
William Bird	2000	Tennessee
Jeffrey densmore	2002	Michigan
Daniel Evans	1999	Tennessee
Brian Franke	1999	Michigan
Derek Jokisch (HP)	1999	Florida
Andrew Knight	2002	Florida
Heather Maclean	2000	MIT
Scott Mosher	2001	Georgia Tech
Jeffiner Parsons (HP)	2002	Tennessee
Thomas "Todd" Pleune	1999	MIT
William Prucka	2001	Michigan
Todd Smith	2000	Purdue
Revecca Steinman	2000	Michigan

SCHOLARS		
<i>Name</i>	<i>Year of Study</i>	<i>University</i>
Shawn Bialik	Sophomore	Michigan
Nathan Carstens	Sophomore	Oregon State
Nicholas Eidietis	Sophomore	Michigan
Adam Gramling	Sophomore	Michigan
Billy Hines	Sophomore	RPI
Joseph Lapka	Sophomore	Michigan
Tony Roder	Sophomore	Wisconsin
David Werkheiser	Sophomore	Penn State
Brian Bures	Junior	NC State
Jonathon Cross	Junior	Michigan
Carl Haynes	Junior	Oregon State
Corwin Hildebrandt	Junior	RPI
Scott Kief	Junior	Purdue
Robert Koponec	Junior	Purdue
Kenneth Mayorga	Junior	Florida
Richard Rrenneke	Junior	Kansas State
Scott Sepke	Junior	Michigan
Stephanie Sharp	Junior	Kansas State
Robert Szollosy	Junior	Florida
Andre Wingo	Junior	NC State
Cory Ahrens	Senior	Kansas State
Marc Berte	Senior	MIT
Timothy Etzel	Senior	Kansas State
Kara Bigson	Senior	Wisconsin
Benjamin Grambau	Senior	Michigan
Brenden Heidrich	Senior	Penn State
Nicole Jefferies	Senior	Utah
Karin Marcinkowski	Senior	Michigan
Ernest Milavic	Senior	Penn State
Jayson O'Hare	Senior	Cincinnati
Mark Porter	Senior	Michigan
Amy Presson	Senior	NC State
Kevin Quigley	Senior	Penn State
Sabrina Salazar	Senior	Florida
Jonathan Stevens	Senior	RPI
Daniel Tinkler	Senior	Kansas State
James Wines	Senior	Michigan

For additional information please contact:

John Gutteridge
U. S. Dept. of Energy
NE-20
19901 Germantown Road
Germantown, MD 20874
e-mail: john.gutteridge@hq.doe.gov

